

II. REMARKS

The final Office Action dated October 16, 2006, has been received and carefully noted. The above amendments and the following remarks are being submitted as a full and complete response thereto.

Claims 1-5, 7 and 10-24 are pending. Claims 1, 16, and 17 are amended and claims 6 and 8 are canceled. The amendments are supported by the originally filed specification and claims. In particular, the amendments to claim 1 are supported, for example, by originally filed claims 6 and 8, the paragraph bridging pages 5 and 6, and the second full paragraph on page 4 of the specification. Meanwhile, the dependencies of claims 16 and 17 are amended to depend from a pending claim. No new matter is added.

Entry of this Amendment is proper under 37 C.F.R. §1.116 since this Amendment: (a) places the application in condition for allowance for reasons discussed herein; (b) does not raise any new issue regarding further search and/or consideration since the Amendment amplifies issues previously discussed throughout prosecution; (c) does not present any additional claims without canceling a corresponding number of finally-rejected claims; and (d) places the application in better form for appeal, should an appeal be necessary. Entry of the Amendment is thus respectfully requested.

Claims 1-8, 14-16, and 18-22 are rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as unpatentable over Zolonitsky et al. (U.S. Patent App. Pub. No. 2001/003124). This rejection is traversed.

Applicants respectfully note that Zolonitsky et al. clearly discloses that component I) is composed of "ETFE or ECTFE fluoropolymers modified with hydrogenated monomers," wherein ethylene is always present as an essential comonomer in combination with TFE or CTFE (Zolonitsky et al., paragraph 18, paragraphs 22-25, and claim 1) (emphasis added). See, for example "from 10 to 70%, preferably from 35 to 55%, by moles of ethylene" in paragraph 23.

In contrast, the presently claimed invention clearly discloses that "CTFE polymer with one or more comonomers selected from perfluoroalkylvinylethers ...; dioxoles having formula: ... (I) ...; acrylic monomers having general formula: ... (II) ...; vinylidene fluoride (VDF) and/or tetrafluoroethylene (TFE)" (present claim 1). As such, the polymers of the presently claimed invention do not require the essential ethylene comonomer of Zolonitsky et al.

Further, Zolonitsky et al. does not teach or suggest "chlorotrifluoroethylene (CTFE) polymer containing at least 90% by moles of CTFE" as in present claim 1. In contrast, Zolonitsky et al. discloses the following:

More in particular the component I) of the compositions of the invention is a copolymer formed of:

(a) from 10 to 70%, preferably from 35 to 55%, by moles of ethylene,

(b) from 30 to 90%, preferably from 45 to 65%, by moles of a fluorinated monomer selected from tetrafluoroethylene, chlorotrifluoroethylene, or mixtures thereof,

(c) from 0.1 to 30%, preferably from 1 to 15%, by moles of a hydrogenated monomer of formula:



(Zolonitsky et al., paragraphs 22-25). Applicants note that the chlorotrifluoroethylene (CTFE) monomer of (b) must be less than 90%, as a CTFE monomer of 90% and

ethylene of (a) of at least 10% ("from 10 to 70%") does not allow for any component (c) in the composition, and Zolonitsky et al. discloses that component (c) must be present in at least 0.1% by moles ("from 0.1 to 30%, preferably from 1 to 15%"). Therefore, the disclosure of Zolonitsky et al. excludes the upper limit of 90% of CTFE, while the presently claimed invention discloses 90% by moles as the lower limit of CTFE.

As to the obviousness rejection in particular, Applicants respectfully submit that, as noted above, component A) of the presently claimed invention does not require the essential ethylene comonomer of Zolonitsky et al. As such, Zolonitsky et al. does not disclose components identical to component A) of the presently claimed invention.

Applicants also note that the technical problem of the presently claimed invention is to find CTFE-based polymer compositions that are "easy to be prepared and easy to be transformed into foamed coatings or articles" without requiring foaming agents other than the nucleating agent of component B) (specification, page 3, fourth full paragraph and paragraph bridging pages 7 and 8). In fact, "[t]he use of certain foaming agents which by decomposition give volatile products, shows the drawback that residues of the agent remain in the foamed fluoropolymer and can modify its electrical insulation properties" (specification, page 3, second full paragraph). Further, "[t]he use of inert gases [e.g., N₂ or CO₂] shows the drawback that it is not easy to adjust the gas inlet during the extrusion at a flow rate suitable to obtain the desired foaming. Anyhow it results necessary to use an expensive and complex equipment, operating under high pressure, to guarantee an uniformity of the foamed electric wire" (Specification, page 3, third full paragraph).

The Applicants have surprisingly found that the above technical problems can be solved by compositions of CTFE-based polymers (see Examples 1, 3 and 5 of the specification, which disclose a PCTFE homopolymer, and Example 4, which discloses a copolymer of 98.4% of CTFE and 1.6% of perfluorovinylether) with nucleating agents. The specification discloses the following:

By thermoforming or extrusion of the present invention [A] +B)] composition foamed molded articles and in particular foamed insulations of electric wires and cables are [unexpectedly] obtained having a void degree ... preferably higher than 20% by volume, wherein the average cell sizes are lower than 100 micron, preferably lower than 60 micron.

The foamed invention compositions are characterized in having a low $\tan\delta$

The use of the invention composition as foamed insulations of electric wires and cables allows to obtain wires and cables having a low attenuation.

(Specification, page 8, paragraphs). Low attenuation is a property useful for applications as optical fibers.

Zolonitsky et al. does not teach or suggest a foaming agent as the technical problem of Zolonitsky et al. (i.e., thermoplastic fluoropolymer compositions flexible without whitening) was completely different from that of the presently claimed invention. Zolonitsky et al. is directed to thermoplastic fluoropolymer compositions, flexible without whitening, comprising:

- I) ETFE or ECTFE fluoropolymers modified with hydrogenated monomers;
- II) one or more hydrogenated plasticizers;
- III) one or more inorganic fire retardants;

IV) optionally other ingredients such as fillers, smoke retarders, intumescent agents, pigments, lubricants, organic fire retardants and thermal stabilizers.”

(Zolonitsky et al., paragraphs 17-21). Zolonitsky et al. does not provide any reference or other disclosure as to the foaming properties (i.e., voids% or average void sizes” of the thermoplastic fluoropolymers. Further, no nucleating agent is required in the optional elements of ingredient IV of Zolonitsky et al.

As to polymer component I) of Zolonitsky et al., Applicants note that Zolonitsky et al. discloses that it is formed by “preferably from 45 to 65%, by moles of a fluorinated monomer selected from tetrafluoroethylene, chlorotrifluoroethylene, or mixtures thereof” (Zolonitsky et al., paragraph 24). As such, this preference of Zolonitsky et al. teaches away from the polymer composition of the presently claimed invention which needs “at least 90%” of CTFE.

Applicants also submit that those of skill in the art would not have found in Zolonitsky et al. even a slight hint of nucleating agents being useful as foaming agents in addition to CTFE polymers comprising at least 90% by moles of CTFE, without requiring other foaming agents other than the nucleating agent of component B), much less for preparing foamed insulations of wire and cables having a void degree higher than 20% by volume and average cell sizes lower than 100 micron (see, e.g., page 8, lines 13-16 of the specification and Examples 1, 3 and 4). As such, there would have been no motivation for those of skill in the art to obtain the compositions of the presently claimed invention.

For at least the above reasons, Applicants submit that those of skill in the art would not have found claims 1-8, 14-16, and 18-22 anticipated by or obvious over the disclosure of Zolonitsky et al. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-8, 14-16, and 18-22 under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as unpatentable over Zolonitsky et al.

Claims 11-13, 17, 23, and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zolonitsky et al. This rejection is traversed.

Applicants submit that dependent claims 11-13, 17, 23, and 24 are patentable for at least the same reasons as independent claim 1.


Accordingly, for at least the above reasons, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 11-13, 17, 23, and 24 under 35 U.S.C. § 103(a) over Zolonitsky et al.

III. Conclusion

Applicants respectfully submit that this application is in condition for allowance and such action is earnestly solicited. If the Examiner believes that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below to schedule a personal or telephone interview to discuss any remaining issues.

In the event that this paper is not being timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to Counsel's Deposit Account Number 01-2300, referencing Docket Number 108910-00129.

Respectfully submitted,


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Enclosure: Petition for Extension of Time (2 months)